IN THE CLAIMS

Please amend claims 11, 12 and 24, 25 and enter new claim 27 as follows:

1. (Previously Amended) A method for optically sensing the presence of an object on a multiple sensing zone conveyor, said method comprising the steps of:

detecting light reflected from an object transported on a conveyor utilizing a plurality of emitter-receiver pairs, wherein each of the plurality of emitter-receiver pairs is associated with a corresponding sensing zone on the conveyor;

Receiving a signal corresponding to the detected light from each of said plurality of emitter-receiver pairs at a signal conditioning module;

multiplexing the received signals to individually access each of the plurality of emitter-receiver pairs from said signal conditioning module; and

conditioning the detected light signals from each of the plurality of emitter-receiver pairs within the signal conditioning module to provide ~~a~~ valid output signals, which are utilized to provide controlling information necessary to route said object to a proper location and prevent damage to said object from other objects as said object is being transported upon said conveyor.

2. (Previously Amended) The method of claim 1 further comprising the step of:

emitting light, such that said light is reflected by said object and thereafter detected utilizing said plurality of emitter-receiver pairs.

3. (Previously Amended) The method of claim 1 further comprising the step of:

arranging said plurality of emitter-receiver pairs to provide control over a sensing distance.

4. (Original) The method of claim 3 wherein said sensing distance comprises a maximum sensing distance.

5. (Original) The method of claim 3 wherein said sensing distance comprises a minimum sensing distance.

6. (Previously Amended) The method of claim 1 wherein each of said plurality of emitter-receiver pairs comprises an optical receiver.

7. (Previously Amended) The method of claim 1 wherein each of said plurality of emitter-receiver pairs comprises an optical emitter.

8. (Previously Cancelled)

9. (Previously Amended) The method of claim 1 wherein each of said plurality of emitter-receiver pairs is included in a plurality of optical sensing components, said method further comprising:

configuring said plurality of optical sensing components to comprise at least one optical emitter, at least one optical receiver, and at least one associated optical lens.

10. (Original) The method of claim 9 further comprising the step of:

maintaining said at least one optical emitter, said at least one optical receiver, and said at least one associated optical lens in a sensor housing.

11. (Currently Amended) The method of claim 10, wherein said signal conditioning module interfaces with a microprocessor to form a distributed microcontroller, said method further comprising the step of:

connecting said plurality of optical sensing components to said distributed microcontroller ~~controller~~.

12. (Currently Amended) The method of claim 11 further comprising the step of:

configuring said distributed microcontroller ~~controller~~ to comprise electronic circuitry which, for each of the plurality of emitter-receiver pairs, supplies power to said at least one optical emitter, amplifies a signal output from said at least one optical receiver, performs required signal conditioning and processing, and provides an interface to said distributed ~~a~~ microcontroller.

13. (Previously Amended) A method for optically sensing the presence of an object on a multiple sensing zone conveyor, said method comprising the steps of:

arranging a plurality of emitter-receiver pairs to provide control over a sensing distance, wherein each of the plurality of emitter-receiver pairs is associated with a corresponding sensing zone on a conveyor;

configuring each of said plurality of emitter-receiver pairs to comprise at least one optical emitter, at least one optical receiver, and at least one associated optical lens;

detecting light reflected from an object transported on the conveyor utilizing said plurality of emitter-receiver pairs when said object enters the sensing zones;

receiving a signal corresponding to the detected light from each of said plurality of emitter-receiver pairs at a signal conditioning module;

multiplexing the received signals to individually access each of the plurality of emitter-receiver pairs from said signal conditioning module; and

conditioning the detected light signals from each of the plurality of emitter-receiver pairs within the signal conditioning module to provide ~~a~~ valid output signals, which ~~is~~ are utilized to provide controlling information necessary to route said object to a proper location and prevent damage to said object from other objects as said object is being transported upon said conveyor.

14. (Previously Amended) A system for optically sensing the presence of an object on a multiple sensing zone conveyor, said system comprising:

a plurality of emitter-receiver pairs for detecting light reflected from an object transported on a conveyor when said object enters ~~a~~ sensing zones on the conveyor, wherein each of the sensing zones is associated with one of the plurality of emitter-receiver pairs;

a signal conditioning module receiving the detected light signals from each of the plurality of emitter-receiver pairs, wherein said signal conditioning module multiplexes the received signals to individually access each of said plurality of emitter-receiver pairs and conditions the detected light signals to provide ~~a~~ valid output signals, which ~~is~~ are utilized to provide controlling information necessary to route said object to a proper location and prevent damage to said object from other objects as said object is being transported upon said conveyor.

15. (Previously Amended) The system of claim 14 wherein each of said plurality of emitter-receiver pairs further comprises a light emitter.

16. (Previously Amended) The system of claim 14 wherein each of said plurality of emitter-receiver pairs is arranged to provide control over a sensing distance.

17. (Original) The system of claim 16 wherein said sensing distance comprises a maximum sensing distance.

18. (Original) The system of claim 16 wherein said sensing distance comprises a minimum sensing distance.

19. (Previously Amended) The system of claim 15 wherein each of said plurality of emitter-receiver pairs comprises an optical receiver.

20. (Previously Cancelled)

21. (Previously Cancelled)

22. (Previously Amended) The system of claim 14 wherein each of said plurality of emitter-receiver pairs is configured to comprise at least one optical emitter, at least one optical receiver, and at least one associated optical lens.

23. (Original) The system of claim 22 wherein said at least one optical emitter, said at least one optical receiver, and said at least one associated optical lens are maintained in a sensor housing.

24. (Currently Amended) The system of claim 22, wherein said signal conditioning module interfaces with a microprocessor to form a distributed microcontroller, and wherein each of said plurality of emitter-receiver pairs is connected to said ~~the~~ distributed microcontroller ~~controller~~.

25. (Currently Amended) The system of claim 24 wherein said distributed microcontroller ~~controller~~ is configured to comprise electronic circuitry which, for each of the plurality of emitter-receiver pairs, supplies power to said at least one optical emitter, amplifies a signal output from said at least one optical receiver, performs required signal conditioning and processing, and provides an interface to said distributed ~~a~~ microcontroller.

26. (Previously Cancelled)

27. (New) The system of claim 14 wherein:

each of said plurality of emitter-receiver pairs is configured to comprise at least one optical emitter, at least one optical receiver, and at least one associated optical lens;

said signal conditioning module interfaces with a microprocessor to form a distributed microcontroller, and wherein each of said plurality of emitter-receiver pairs is connected to said distributed microcontroller; and

said distributed microcontroller is configured to comprise electronic circuitry which, for each of the plurality of emitter-receiver pairs, supplies power to said at least one optical emitter, amplifies a signal output from said at least one optical receiver, performs required signal conditioning and processing, and provides an interface to said distributed microcontroller; and

a single package in which said distributed microcontroller and said plurality of emitter receiver pairs are integrated.

27. (New)